African Security Studies (Political Science focus)

Integrating Indigenous Knowledge Systems into AI Development in West Africa: An Ethiopian Perspective

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Abstract

The rapid advancement of artificial intelligence (AI) in West Africa has led to a need for integrating indigenous knowledge systems (IKS). Ethiopia is at an early stage of AI development, making it suitable for exploring this integration. A qualitative research approach was employed, involving interviews with local experts from various sectors including agriculture, healthcare, and education. Data were analysed using thematic content analysis. There is a significant interest in the integration of IKs into AI development, particularly in improving agricultural productivity through weather forecasting models that incorporate traditional climate knowledge. The findings suggest that by integrating IKs, AI systems can achieve higher accuracy and relevance to local contexts. However, there are also concerns about data privacy and cultural sensitivity. Develop guidelines for the ethical use of IKS in AI development; conduct more empirical studies to validate these recommendations; and foster collaboration between technologists and traditional knowledge holders. AI Development, Indigenous Knowledge Systems, Ethiopia, West Africa Model estimation used $\hat{\{\theta\}} = argmin\{\theta\} sumiell(yi, f\theta(\xi)) + \lambda lVert\theta rVert 2^2$, with performance evaluated using out-of-sample error.

Keywords: *Sub-Saharan, AI, machine learning, ethnography, biodiversity, complexity theory, neural networks*

ABSTRACT-ONLY PUBLICATION

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